

SERVICE MANUAL

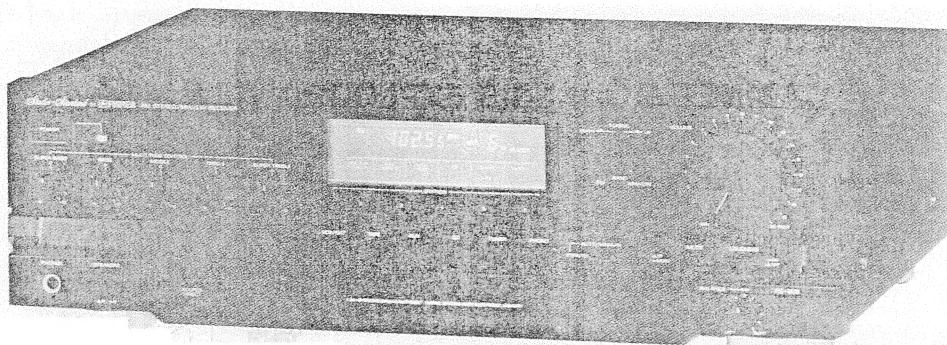


FISHER

FM STEREO/MW/LW RECEIVER

RS-909

(EUROPE)



132 346 40

SPECIFICATIONS

POWER AMPLIFIER SECTION

Minimum RMS sine wave power per channel within stated bandwidth at no more than stated

Distortion and with 8Ω load 40W (DIN)

Total Harmonic Distortion 0.09%

I.M. Distortion 0.09%

Speaker Damping > 20

PREAMPLIFIER SECTION

Frequency Response

Phono (RIAA) ±2dB

AUX (20Hz ~ 20kHz) +0, -2dB

Input Sensitivity and Impedance

Phono 2.5mV/50kΩ

Tape Monitor 1,2 150mV/50kΩ

AUX/VIDEO/CD 150mV/50kΩ

Phono Max. Input Capability 150mV

Multi Tone Control

Super Bass 63Hz ±10dB

Bass 250Hz ±10dB

Middle 1kHz ±10dB

Treble 4kHz ±10dB

Super Treble 16kHz ±10dB

Loudness Contour (100Hz/10kHz) +8dB/+4dB

Hum and Noise (IHF Short Circuit, A Network)

Phono	70dB
Tape Monitor 1,2	80dB
AUX/VIDEO/CD	80dB
Source Direct (AUX)	80dB

FM SECTION

Usable Sensitivity

Mono	1.0µV
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46dB Quieting Sensitivity	4.0µV
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Mono	4.0µV
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Signal-to-Noise Ratio

Mono	70dB
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Stereo	63dB
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Capture Ratio	2.0dB
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Alt. Channel Selectivity(±300kHz)	55dB
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Image Response Ratio	70dB
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Spurious Response Ratio	95dB
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IF Response Ratio	> 90dB
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AM Suppression Ratio	55dB
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Total Harmonic Distortion at 60dBf	
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Mono (1kHz)	0.2%
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Stereo (1kHz)	0.3%
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Stereo Separation	
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(100Hz/1kHz/10kHz)	40/40/30dB
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— Specifications and design are subject to change without notice. —

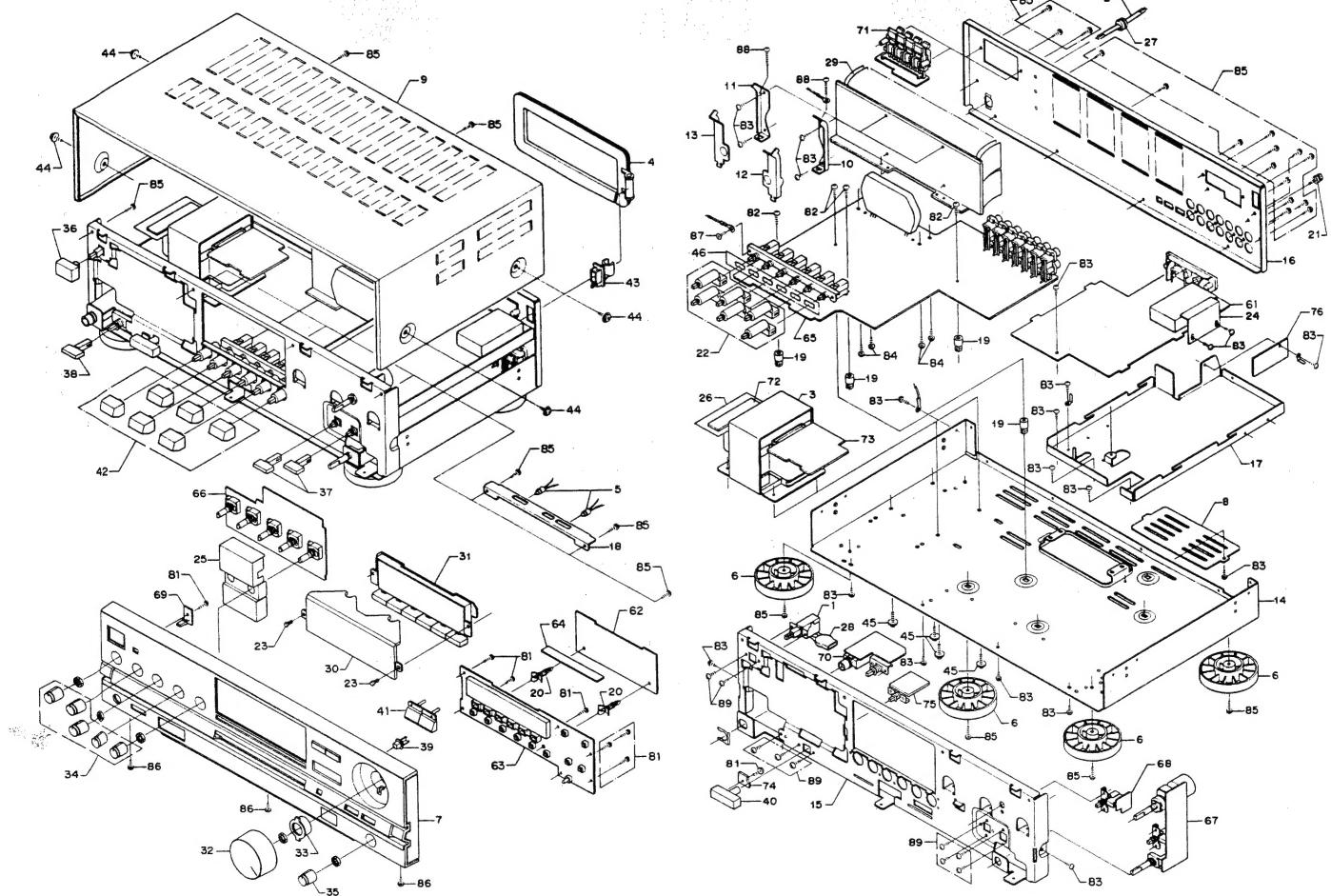
REFERENCE No. WM-570227

SPECIFICATIONS (Continued)

Sub-Carrier Rejection (19kHz/38kHz)	30/40dB	Usable Sensitivity	2000µV/m
Audio Frequency Response (20Hz ~ 15kHz)	±3.0dB	Selectivity (±9kHz)	40dB
MW SECTION			
Usable Sensitivity	650µV/m	Signal-to-Noise Ratio	50dB
Selectivity (±9kHz)	40dB	Image Response Ratio	45dB
Signal-to-Noise Ratio	55dB	IF Response Ratio	65dB
Image Response Ratio	35dB	GENERAL	
IF Response Ratio	65dB	Power Requirements	AC 220V (50Hz)
LW SECTION		Dimensions (WxHxD)	440 x 131.5 x 272mm
		Weight (approx.)	6.4kg

– Specifications and design are subject to change without notice. –

CABINET & CHASSIS EXPLODED VIEW



CABINET & CHASSIS PARTS LIST

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
PACKAGE							
	620 192 5487	Box Corrugate-Exp.	1	68	620 190 9456	Mode Switch P.C.B. Assy	1
	620 190 3256	Pad Left	1	69	620 190 9463	Power IND P.C.B. Assy	1
	620 190 3263	Pad Right	1	70	620 190 9470	SP SW.HP P.C.B. Assy	1
	620 059 6596	Patching Sheet	1	71	620 193 2881	SP Terminal P.C.B. Assy	1
	620 148 5639	Poly Cover (Loop Antenna)	1	72	620 193 2904	Terminal P.C.B. Assy	1
	620 148 8012	Sheet Polyethylene	1	73	620 193 2911	Fuse Terminal Assy	1
	620 152 7452	Serial No. Sheet	2	74	620 193 2928	S/D IND P.C.B. Assy	1
				75	620 193 2935	S/D Switch P.C.B. Assy	1
				76	620 190 8930	PCB	1
ACCESSORIES							
	620 193 4410	Bag Fan Assy	1	81	411 020 5706	SCR S-TPG BRZ 2.6X8	8
	620 038 1673	FM Antenna Assy	1	82	411 020 5904	SCR S-TPG BRZ 3X10	4
	620 057 8783	Bag Fan	1	83	411 020 7700	SCR S-TPG BRZ 3X6	20
	620 062 0543	Serial No. Sheet	1	84	411 020 8004	SCR S-TPG BRZ 3X8	4
	620 112 8123	Holder Antenna	1	85	411 099 9803	SCR S-TPG BRZ 3X8	26
	620 152 2624	Certificate Card	1	86	411 021 5903	SCR S-TPG BIN 3X6	3
	620 193 4731	Explanatory Booklet	1	87	411 034 6409	SCR FLT 3X6	1
				88	411 002 6806	SCR PAN 3X14	2
				89	411 002 8503	SCR PAN 3X6	9
CABINET							
	620 022 3461	Terminal Lug	2				
	620 125 8424	Wire Band	10				
	620 152 7452	Serial No. Sheet	1				
C707	△ 620 006 6679	Capacitor 0.01MF400V	1				
C708	403 047 9607	ELECT 0.1U M 50V	1				
C709	403 071 5903	CERAMIC 220P K 50V	1				
1	△ 620 016 5563	Switch Push Power	1				
2	△ 620 023 7550	Power Cord	1				
3	△ 620 193 2195	Power Trans	1				
4	620 028 2734	AM Loop Antenna	1				
5	620 188 0885	Lamp	2				
6	620 185 2752	Leg Assy	4				
7	620 192 5425	Panel Decorate Assy	1				
8	620 045 6944	Cover Bottom	1				
9	620 045 6982	Cover	1				
10	620 189 9672	Metal Mount IC RB	1				
11	620 189 9689	Metal Mount IC LB	1				
12	620 189 9696	Metal Mount IC RF	1				
13	620 189 9702	Metal Mount IC LF	1				
14	620 048 7450	Chassis	1				
15	620 189 9740	Panel Front	1				
16	620 192 5456	Panel Rear	1				
17	620 189 9801	Chassis Sub	1				
18	620 050 1491	Metal Mount Lamp	1				
19	620 050 4225	Mount P.C.B.	4				
20	620 190 5694	Mount P.C.B.	2				
21	620 051 2152	Screw Ground	1				
22	620 189 1584	Shaft	6				
23	620 191 2746	Rivet 3.5	2				
24	620 190 0736	Cover Shield	1				
25	620 190 6448	Cover Shield EQ	1				
26	620 193 0009	Plate Sevr	1				
27	620 053 2136	Bushing (MP4N-4)	1				
28	620 053 6899	Cover Safety	1				
29	620 192 5463	Plate Heat Sink	1				
30	620 186 9378	Filter	1				
31	620 190 5717	Mount Screen Assy	1				
32	620 190 4406	Knob Volume Assy	1				
33	620 190 8473	Slide Assy	1				
34	620 189 1195	Knob Volume (Graphic EQ)	5				
35	620 189 1201	Knob Volume (Balance)	1				
36	620 186 4014	Knob (Power)	1				
37	620 185 3216	Knob Push (Mono/Loudness)	2				
38	620 185 3223	Knob Push (Speaker)	1				
39	620 185 3728	Knob Tact (Auto/Manual)	1				
40	620 189 1812	Knob Direct (Source Direct)	1				
41	620 191 7642	Knob Band (Band Select)	1				
42	620 189 1836	Knob (Function)	6				
43	620 122 2210	Holder Antenna	1				
44	620 123 0284	SCR TPG BIN + M4.0X8	4				
45	620 123 0833	SCR Bind TAP-B + M4X10	4				
46	620 124 6926	Cushion	6				
61	620 193 2836	Tuner P.C.B. Assy	1				
62	620 193 2843	Synthesizer P.C.B. Assy	1				
63	620 190 9340	Tuner Switch P.C.B. Assy	1				
64	620 190 9371	Jumper P.C.B. Assy	1				
65	620 193 2850	Main Amplifier P.C.B. Assy	1				
66	620 190 9432	G.EQ P.C.B. Assy	1				
67	620 193 2874	VR P.C.B. Assy	1				

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol △ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with △, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CAUTION ON RF ADJUSTMENT

This model uses a microprocessor for memory preset control for the various bands. This function has been used to preset frequency points for the different bands to permit adjustment and make it possible to check the function of the microprocessor. To use this supplemental function, ground initialize the lead of R118 on the Synthesizer P.C. Board for 1 second before beginning adjustment. The following table shows the initially preset frequencies.

Band	Memory					
	1	2	3	4	5	6
FM-1	87.5MHz	108MHz	88MHz	98MHz	108Hz	90MHz
MW/LW	603kHz	1404kHz	999kHz	160kHz	350kHz	250kHz

FM TUNER ALIGNMENT

FM ALIGNMENT – Band Selector switch to FM/ST(MUTE) position.
Note is almost unnecessary to adjust coil in Front End as perfectly adjusted.

ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
1. FM IF S-CURVE ALIGNMENT	Connect 10.7MHz Radio IF Genescope output to Pin IF (Front End) and ground lead to chassis. Use 5pF capacitor in series with generator output lead.	Position of non-interference Minimum Frequency.	Connect Radio IF Genescope input to TP209 and ground lead to chassis.	Adjust FM DET 1 Coil (T207) and FM DET 2 (T206) so that S-wave from becomes symmetrical.
2. DETECTOR ADJUSTMENT (MINIMUM T.H.D.)	Connect FM RF signal generator through FM Dummy Antenna to FM Antenna terminals. Set generator to 98MHz \pm 2kHz. Modulate with 1kHz to provide \pm 40kHz deviation. Setting generator with attenuator output level for 60dB μ V.	Set MODE switch to FM MONO position and Preset STATION button to "4" posion. Set to 98MHz.	Connect DC Voltmeter across TP206 and TP208.	Adjust FM DET 1 Coil (T207) until DC Voltmeter reads 0V \pm 50mV.

Note: Repeat Step 1 (FM DET 1 Coil T207) and 2 (FM DET 2 Coil T206) until optimum alignment is reached.

3. FM STEREO SIGNAL SEPARATION CONTROL	Connect FM Stereo SG to FM Antenna terminals. 19kHz signal ON. Main channel, sub channel signal ON. Apply 1000Hz signal from LEFT channel.	Same as above. Set Mode switch to ST(MUTE) position.	Connect AC VTVM and Oscilloscope to REC OUT.	Adjust VR203 for minimum output.
	Same as above for RIGHT channel.		Connect AC VTVM and Oscilloscope to REC OUT.	
4. FM MUTING AUTO STOP SENSITIVITY ADJUSTMENT	Set generator to 98MHz. Adjust attenuator output level to 16dB μ V.	Same as above.	Front panel TUNED Indicator Display.	Set Mode Switch to ST(MUTE). Adjust VR202 until the TUNED Indicator partly light up.

Note: Decrease the output level of ATT and confirm that the wave form disappears. Increase the output level of ATT again and confirm that the input level meets the specifications sufficiently when the wave form has appeared.

Use a screwdriver with plastic grip for all adjustments.

MW Frequency Cover Range
Tuning Voltage Value at TP 202
(Table 1)

	522kHz	1611kHz
Minimum	0.9V	7.0V
Typical	1.0V	8.0V
Maximum	1.3V	9.0V

LW Frequency Cover Range
Tuning Voltage Value at TP 202
(Table 2)

	153kHz	360kHz
Minimum	1.0V	7.0V
Typical	1.0V	7.5V
Maximum	1.8V	9.0V

AM TUNER ALIGNMENT

AM ALIGNMENT – Band Selector switch to MW or LW position.
Maintain generator output as low as possible for suitable indication.

Note: Perform this alignment after FM Tuner Alignment.

ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
1. AM IF ALIGNMENT	Connect 450kHz Radio IF Genescope output to Pin TP1 and TP2 Adjust output level to 70dB μ V.	Position of non-interference Minimum Frequency.	Connect Radio IF Genescope input to TP205 and ground lead to chassis.	Adjust AM IFT (T205) for maximum gain and best symmetry. Keep signal low enough for noise on response.
2. MW RF FREQUENCY COVER ALIGNMENT (1611kHz)	Do not connect generator.	Front Panel DIGITAL Counter Display Set to 1611kHz.	Connect DC Voltmeter to TP202 and ground lead to chassis.	Check DC Voltmeter for Indication 7.0V ~ 9.0V.
3. (522kHz)	Same as above.	DIGITAL Counter Display Set to 522kHz.	Same as above.	Check DC Voltmeter for Indication 0.9V ~ 1.3V.
Note: Repeat the adjustments in items 2 and 3. Then, confirm that each voltage becomes 1.0V to 8.0V at receiving frequency of 522kHz to 1611kHz. (See Table 1)				
4. LW RF FREQUENCY COVER ALIGNMENT (360kHz)	Do not connect generator.	Front Panel DIGITAL Counter Display Set to 360kHz.	Connect DC Voltmeter to TP202 and ground lead to chassis.	Check DC Voltmeter for Indication 7.0V ~ 9.0V.
5. (153kHz)	Same as above.	DIGITAL Counter Display Set to 153kHz.	Same as above.	Check DC Voltmeter for Indication 1.0V ~ 1.8V.
Note: Repeat the adjustments in Items 4 and 5. Then, confirm that each voltage becomes 1.0V to 7.5V at receiving frequency of 153kHz to 360kHz. (See Table 2)				
6. MW RF TRACKING ALIGNMENT (603kHz)	Connect Standard Loop Antenna to output terminal of AM RF Signal Generator. Place Loop Antenna 60cm away from Loop antenna (Unit). Generator Setting to 603kHz or 1404kHz. Modulate with 400Hz (30 % modulation).	Set Preset STATION button to "1" position. Set to 603kHz.	Connect AC VTVM and Oscilloscope to REC OUT.	Adjust MW ANT Coil (T201) for maximum gain output.
7. (1404kHz)		Change Preset STATION button to "2" position. Set to 1404kHz.	Same as above.	Adjust MW ANT Trimmer (TC201) for maximum gain output.
Note: Repeat the adjustments in Items 6 and 7. Then, confirm there is no tracking error.				
8. LW RF TRACKING ALIGNMENT (160kHz)	Change generator setting to 160kHz.	Set Preset STATION button to "4" position. Set to 160kHz.	Connect AC VTVM and Oscilloscope to REC OUT.	Adjust LW ANT Coil (T202) for maximum gain output.
9. (350kHz)	Change generator setting to 350kHz.	Change Preset STATION button to "5" position. Set to 350kHz.	Same as above.	Adjust LW ANT Trimmer (TC202) for maximum gain output.
Note: Repeat the adjustments in Items 8 and 9. Then, confirm there is no tracking error.				
10. AM AUTO STOP SENSITIVITY ADJUSTMENT	Change generator setting to 999kHz and output level to 60dB μ V/m.	Set Preset STATION button to "3" position. Set to 999kHz.	Front Panel TUNED Indicator Display.	Adjust VR201 until the Indicator partly light up.

Use a screwdriver with plastic grip for all adjustments.

P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
TUNER P.C.B. ASSY							
61	620 193 2836	Tuner P.C.B. Assy	1	D201	407 000 4807	VARACTOR DI SVC321D-2	1
	620 191 8632	FM Front End 4EU AGC	1	or	407 000 4708	VARACTOR DI SVC321C-2	1
(Component parts used in Front End are not serviceable and available.)							
	620 022 2921	ANT Terminal 3P	1	D203	407 000 4807	VARACTOR DI SVC321D-2	1
	411 020 8004	SCR S-TPG BRZ 3X8	1	or	407 000 4708	VARACTOR DI SVC321C-2	1
	620 031 4763	Wire Wrap Terminal	10	D204	407 008 0405	DIODE GMB01-BT	1
	620 052 9297	Cover Shield	1	D205	407 008 0405	DIODE GMB01-BT	1
	620 053 8848	Plate Heat Sink	1	D206	407 008 0405	DIODE GMB01-BT	1
CF201	620 014 5664	Ceramic Filter	1	D207	407 008 0405	DIODE GMB01-BT	1
CF202	620 014 5664	Ceramic Filter	1	D208	407 008 0405	DIODE GMB01-BT	1
CF204	620 014 6258	Ceramic OSC	1	D209	407 049 6008	ZENER DIODE GZA11Y-BT	1
CF205	620 014 5862	Ceramic Filter 450kHz	1	D210	407 008 0405	DIODE GMB01-BT	1
CN201	620 021 6203	Connector 5P	1	C202	403 043 4903	ELECT 33U M 16V	1
CN202	620 021 6227	Connector 10P	1	C203	403 069 8404	CERAMIC 0.01U Z 50V	1
CN203	620 182 8955	Plug 3P	1	C204	403 069 8404	CERAMIC 0.01U Z 50V	1
CN204	620 182 8993	Plug 4P	1	C205	403 071 0601	CERAMIC 0.015U Z 50V	1
F201	620 191 6607	FTZ Antenna Filter	1	C206	403 074 2701	CERAMIC 0.047U Z 50V	1
ICP201	620 017 0734	Protector ICP-5	1	C208	403 026 5408	CERAMIC 47P K 50V	1
L201	620 026 5522	Choke Coil 470UH	1	C209	403 074 2701	CERAMIC 0.047U Z 50V	1
L203	620 026 8103	Choke Coil 470UH	1	C210	403 074 2701	CERAMIC 0.047U Z 50V	1
L204	620 026 8103	Choke Coil 470UH	1	C211	403 050 1209	ELECT 2.2U M 50V	1
TC201	620 007 0867	Trimmer 10PF	1	C212	403 031 0306	CERAMIC 68P K 50V	1
TC202	620 189 9108	Trimmer 20PF	1	C213	403 018 4204	CERAMIC 22P K 50V	1
T201	620 185 9041	MW Antenna Coil	1	C214	403 074 2701	CERAMIC 0.047U Z 50V	1
T202	620 028 1362	LW Antenna Coil	1	C215	403 074 2701	CERAMIC 0.047U Z 50V	1
T203	620 185 9058	OSC Coil MW	1	C216	403 088 1707	STYRENE 340P J 50V	1
T204	620 028 7845	OSC Coil LW	1	C217	403 042 0302	ELECT 10U M 16V	1
T205	620 190 9227	IFT AM	1	C218	403 038 2303	ELECT 100U M 6.3V	1
T206	620 189 6015	IFT DET 10.7MHz 2nd K	1	C219	403 069 8404	CERAMIC 0.01U Z 50V	1
T207	620 189 6008	IFT DET 10.7MHz 1st K	1	C220	403 042 0302	ELECT 10U M 16V	1
T208	620 026 4396	Anti Birdie Filter	1	C221	403 028 8001	CERAMIC 56P K 50V	1
T209	620 026 4518	LP Filter	1	C222	403 047 1502	ELECT 4.7U M 25V	1
T210	620 026 4518	LP Filter	1	C223	403 050 7706	ELECT 3.3U M 50V	1
VR201	620 006 1377	Potentiometer 10KB	1	C224	403 047 1502	ELECT 4.7U M 25V	1
VR202	620 006 1353	Potentiometer 100KB	1	C225	403 069 8404	CERAMIC 0.01U Z 50V	1
VR203	620 006 1353	Potentiometer 100KB	1	C226	403 049 1609	ELECT 1U M 50V	1
X201	620 007 1338	Crystal 7.2MHz	1	C227	403 069 8404	CERAMIC 0.01U Z 50V	1
or	620 007 3226	Crystal 7.2MHz	1	C228	403 060 8403	POLYESTER 0.033U K 50V	1
IC201	409 073 9505	IC LA1266	1	C229	403 074 2701	CERAMIC 0.047U Z 50V	1
IC202	409 017 0803	IC LA3400	1	C230	403 074 2701	CERAMIC 0.047U Z 50V	1
IC203	409 025 7306	IC LM7000	1	C231	403 074 2701	CERAMIC 0.047U Z 50V	1
IC204	409 074 0808	IC LA5667	1	C232	403 075 4308	CERAMIC 820P K 50V	1
Q201	405 016 0806	TR 2SC2839-E	1	C233	403 043 7003	ELECT 330U M 16V	1
Q202	405 027 0505	TR 2SK246-GR	1	C234	403 069 8404	CERAMIC 0.01U Z 50V	1
Q203	405 021 0105	TR 2SD1012-F	1	C235	403 069 8404	CERAMIC 0.01U Z 50V	1
or	405 021 0501	TR 2SD1012-G	1	C236	403 069 0705	CERAMIC 1000P K 50V	1
Q204	405 021 0501	TR 2SD1012-G	1	C237	403 049 1609	ELECT 1U M 50V	1
Q205	405 019 3804	TR 2SC536-G-NP	1	C238	403 039 2906	ELECT 47U M 6.3V	1
or	405 019 2708	TR 2SC536-F-NP	1	C239	403 069 8404	CERAMIC 0.01U Z 50V	1
Q206	405 019 3804	TR 2SC536-G-NP	1	C240	403 042 3501	ELECT 100U M 16V	1
or	405 019 2708	TR 2SC536-F-NP	1	C241	403 049 1609	ELECT 1U M 50V	1
Q207	405 004 5004	TR 2SA608-G-NP	1	C242	403 048 7602	ELECT 0.47U M 50V	1
or	405 004 4502	TR 2SA608-F-NP	1	C243	403 050 1209	ELECT 2.2U M 50V	1
Q210	405 019 3804	TR 2SC536-G-NP	1	C244	403 069 8404	CERAMIC 0.01U Z 50V	1
or	405 019 2708	TR 2SC536-F-NP	1	C245	403 075 0508	CERAMIC 6800P K 50V	1
Q211	405 019 3804	TR 2SC536-G-NP	1	C246	403 073 3006	CERAMIC 390P K 50V	1
or	405 019 2708	TR 2SC536-F-NP	1	C247	403 073 8407	CERAMIC 4700P K 50V	1
Q207	405 004 5004	TR 2SA608-G-NP	1	C248	403 062 0504	POLYESTER 0.047U K 50V	1
or	405 004 4502	TR 2SA608-F-NP	1	C249	403 069 0705	CERAMIC 1000P K 50V	1
Q210	405 019 3804	TR 2SC536-G-NP	1	C250	403 042 0302	ELECT 10U M 16V	1
or	405 019 2708	TR 2SC536-F-NP	1	C251	403 073 3006	CERAMIC 390P K 50V	1
Q211	405 019 3804	TR 2SC536-G-NP	1	C252	403 073 3006	CERAMIC 390P K 50V	1
or	405 019 2708	TR 2SC536-F-NP	1	C253	403 042 0302	ELECT 10U M 16V	1
Q212	405 004 5004	TR 2SA608-G-NP	1	C254	403 042 0302	ELECT 10U M 16V	1
or	405 004 4502	TR 2SA608-F-NP	1	C255	403 072 5407	CERAMIC 2700P K 50V	1
Q213	405 019 3804	TR 2SC536-G-NP	1	C256	403 072 5407	CERAMIC 2700P K 50V	1
or	405 019 2708	TR 2SC536-F-NP	1	C257	403 042 0302	ELECT 10U M 16V	1
Q214	405 019 3804	TR 2SC536-G-NP	1	C258	403 040 2704	ELECT 22U M 10V	1
or	405 019 2708	TR 2SC536-F-NP	1	C259	403 049 1609	ELECT 1U M 50V	1
Q215	405 019 3804	TR 2SC536-G-NP	1	C260	403 045 7100	ELECT 22U M 25V	1
or	405 019 2708	TR 2SC536-F-NP	1	C261	403 074 2701	CERAMIC 0.047U Z 50V	1
Q216	405 004 5004	TR 2SA608-G-NP	1	C262	403 040 2704	ELECT 22U M 10V	1
or	405 004 4502	TR 2SA608-F-NP	1	C263	403 072 7906	CERAMIC 330P K 50V	1
Q217	405 004 5004	TR 2SA608-G-NP	1	C264	403 069 0705	CERAMIC 1000P K 50V	1
or	405 004 4502	TR 2SA608-F-NP	1	C265	403 022 5907	CERAMIC 33P J 50V	1
Q218	405 027 8402	TR 2SK583	1	C266	403 023 9607	CERAMIC 39P J 50V	1
or	405 038 3809	TR 2SK669	1				
Q219	405 027 8402	TR 2SK583	1				

P.C.BOARD PARTS LIST (Continued)

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
MAIN AMPLIFIER P.C.B. ASSY							
65	620 193 2850	Main Amplifier P.C.B. Assy	1	D435	407 049 5506	ZENER DIODE GZA10Y	1
	620 190 9036	Switch Push 6KEY	1	D436	407 005 3805	DIODE DS442-BT	1
	620 188 9925	Pin Jack 4P Black	2	C401	403 018 8509	CERAMIC 220P K 50V	1
	620 188 9932	Pin Jack 6P Black	1	C402	403 018 8509	CERAMIC 220P K 50V	1
	620 020 5887	Connector 1P Assy	2	C403	403 018 8509	CERAMIC 220P K 50V	1
	620 020 5894	Connector 1P Assy	1	C404	403 018 8509	CERAMIC 220P K 50V	1
	411 020 8004	SCR S-TPG BRZ 3X8	2	C405	403 047 1502	ELECT 4.7U M 25V	1
	620 031 4763	Wire Wrap Terminal	2	C406	403 047 1502	ELECT 4.7U M 25V	1
	620 053 7247	Plate Heat Sink	2	C407	403 018 8509	CERAMIC 220P K 50V	1
CN203	620 190 9081	Connector 3P Assy	1	C408	403 018 8509	CERAMIC 220P K 50V	1
CN204	620 190 9098	Connector 4P Assy	1	C411	403 039 2906	ELECT 47U M 6.3V	1
CN402	620 182 8955	Plug 3P	1	C412	403 039 2906	ELECT 47U M 6.3V	1
CN403	620 182 9006	Plug 5P	1	C413	403 059 0401	POLYESTER 0.018U K 50V	1
CN404	620 182 9013	Plug 7P	1	C414	403 059 0401	POLYESTER 0.018U K 50V	1
L401	620 027 1240	AF Coil	1	C415	403 073 8407	CERAMIC 4700P K 50V	1
L402	620 027 1240	AF Coil	1	C416	403 073 8407	CERAMIC 4700P K 50V	1
	620 191 6355	Jumper	1	C417	403 047 1502	ELECT 4.7U M 25V	1
	620 055 4930	Jumper	1	C418	403 047 1502	ELECT 4.7U M 25V	1
IC401	409 057 4403	IC UPC4570C	1	C421	403 045 0507	ELECT 100U M 25V	1
IC402	409 057 4403	IC UPC4570C	1	C422	403 045 0507	ELECT 100U M 25V	1
IC403	410 057 1200	IC STK4171MK5-SA	1	C425	403 018 8509	CERAMIC 220P K 50V	1
Q401	405 018 0101	TR 2SC3331-T	1	C426	403 018 8509	CERAMIC 220P K 50V	1
or	405 018 0200	TR 2SC3331-U	1	C427	403 018 8509	CERAMIC 220P K 50V	1
Q402	405 018 0101	TR 2SC3331-T	1	C428	403 018 8509	CERAMIC 220P K 50V	1
or	405 018 0200	TR 2SC3331-U	1	C429	403 018 8509	CERAMIC 220P K 50V	1
Q403	405 019 2708	TR 2SC536-F-NP	1	C430	403 018 8509	CERAMIC 220P K 50V	1
or	405 019 3804	TR 2SC536-G-NP	1	C431	403 018 8509	CERAMIC 220P K 50V	1
Q404	405 019 2708	TR 2SC536-F-NP	1	C432	403 018 8509	CERAMIC 220P K 50V	1
or	405 019 3804	TR 2SC536-G-NP	1	C433	403 018 8509	CERAMIC 220P K 50V	1
Q405	405 004 4502	TR 2SA608-F-NP	1	C434	403 018 8509	CERAMIC 220P K 50V	1
or	405 004 5004	TR 2SA608-G-NP	1	C435	403 018 8509	CERAMIC 220P K 50V	1
Q406	405 004 4502	TR 2SA608-F-NP	1	C436	403 018 8509	CERAMIC 220P K 50V	1
or	405 004 5004	TR 2SA608-G-NP	1	C439	403 049 1609	ELECT 1U M 50V	1
Q411	405 035 7107	TR 2SD1913-R	1	C440	403 049 1609	ELECT 1U M 50V	1
or	405 035 7206	TR 2SD1913-S	1	C441	403 018 8509	CERAMIC 220P K 50V	1
or	405 022 5000	TR 2SD1406-Y	1	C442	403 018 8509	CERAMIC 220P K 50V	1
or	405 022 4904	TR 2SD1406-GR	1	C443	403 042 0302	ELECT 10U M 16V	1
Q412	405 007 5308	TR 2SB560-F-MP	1	C444	403 042 0302	ELECT 10U M 16V	1
or	405 007 5100	TR 2SB560-E-MP	1	C447	403 049 1609	ELECT 1U M 50V	1
Q413	405 006 6702	TR 2SA984-F	1	C448	403 049 1609	ELECT 1U M 50V	1
or	405 006 6504	TR 2SA984-E	1	C449	403 009 8105	CERAMIC 100P K 50V	1
Q414	405 035 7107	TR 2SD1913-R	1	C450	403 009 8105	CERAMIC 100P K 50V	1
or	405 035 7206	TR 2SD1913-S	1	C451	403 008 5204	CERAMIC 10P D 50V	1
or	405 022 5000	TR 2SD1406-Y	1	C452	403 008 5204	CERAMIC 10P D 50V	1
or	405 022 4904	TR 2SD1406-GR	1	C453	403 047 1502	ELECT 4.7U M 25V	1
Q415	405 019 3804	TR 2SC536-G-NP	1	C454	403 047 1502	ELECT 4.7U M 25V	1
or	405 019 2708	TR 2SC536-F-NP	1	C457	403 042 0302	ELECT 10U M 16V	1
Q416	405 019 3804	TR 2SC536-G-NP	1	C458	403 042 0302	ELECT 10U M 16V	1
or	405 019 2708	TR 2SC536-F-NP	1	C459	403 072 5407	CERAMIC 2700P K 50V	1
Q417	405 004 4502	TR 2SA608-F-NP	1	C460	403 072 5407	CERAMIC 2700P K 50V	1
or	405 004 5004	TR 2SA608-G-NP	1	C461	403 033 7303	CERAMIC 82P K 50V	1
Q418	405 003 5302	TR 2SA1317-T	1	C462	403 033 7303	CERAMIC 82P K 50V	1
D405	407 008 0405	DIODE GMB01-BT	1	C463	403 050 1209	ELECT 2.2U M 50V	1
D406	407 008 0405	DIODE GMB01-BT	1	C464	403 050 1209	ELECT 2.2U M 50V	1
D407	407 008 0405	DIODE GMB01-BT	1	C465	403 009 8105	CERAMIC 100P K 50V	1
D408	407 008 0405	DIODE GMB01-BT	1	C466	403 009 8105	CERAMIC 100P K 50V	1
D409	407 008 0405	DIODE GMB01-BT	1	C467	403 039 2906	ELECT 47U M 6.3V	1
D410	407 008 0405	DIODE GMB01-BT	1	C468	403 039 2906	ELECT 47U M 6.3V	1
D411	407 008 0405	DIODE GMB01-BT	1	C469	403 015 1602	CERAMIC 2P C 50V	1
D412	407 008 0405	DIODE GMB01-BT	1	C470	403 015 1602	CERAMIC 2P C 50V	1
D413	407 008 0405	DIODE GMB01-BT	1	C471	403 051 3806	ELECT 47U M 50V	1
D414	407 008 0405	DIODE GMB01-BT	1	C472	403 051 3806	ELECT 47U M 50V	1
D415	407 008 0405	DIODE GMB01-BT	1	C473	403 051 3806	ELECT 47U M 50V	1
D416	407 008 0405	DIODE GMB01-BT	1	C474	403 049 5409	ELECT 10U M 50V	1
D417	407 008 0405	DIODE GMB01-BT	1	C475	403 072 2703	CERAMIC 0.022U Z 50V	1
D418	407 008 0405	DIODE GMB01-BT	1	C476	403 072 2703	CERAMIC 0.022U Z 50V	1
D419	407 008 0405	DIODE GMB01-BT	1	C477	403 072 2703	CERAMIC 0.022U Z 50V	1
D420	407 008 0405	DIODE GMB01-BT	1	C478	403 072 2703	CERAMIC 0.022U Z 50V	1
D421	407 049 7807	ZENER DIODE GZA18Y-BT	1	C479	403 062 0900	POLYESTER 0.047U K 50V	1
D422	407 049 7807	ZENER DIODE GZA18Y-BT	1	C480	403 062 0900	POLYESTER 0.047U K 50V	1
D423	407 050 0507	ZENER DIODE GZA27Z	1	C482	403 053 1404	ELECT 22U M 35V	1
D424	407 050 0101	ZENER DIODE GZA24Y	1	C483	403 052 1009	ELECT 22U M 63V	1
D428	407 008 0405	DIODE GMB01-BT	1	C484	403 045 7100	ELECT 22U M 25V	1
D429	407 004 9105	DIODE DSF10C-BT	1	C485	403 045 7100	ELECT 22U M 25V	1
D430	407 092 3900	DIODE DSB15TC-KC5	1	C486	403 053 1404	ELECT 22U M 35V	1
D431	407 092 3900	DIODE DSB15TC-KC5	1	C487	403 045 7100	ELECT 22U M 25V	1
D432	407 092 3900	DIODE DSB15TC-KC5	1	C488	403 072 2703	CERAMIC 0.022U Z 50V	1
D433	407 092 3900	DIODE DSB15TC-KC5	1	C489	404 040 5009	ELECT 4700U M 50V	1
			1	C490	404 040 5009	ELECT 4700U M 50V	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty	
C495	404 012 7000	CERAMIC	0.01U P 500V	1	R477	402 040 5906	OXIDE-MT	2.2K JB 1/2W
C497	403 009 8105	CERAMIC	100P K 50V	1	or	401 055 5703	OXIDE-MT	2.2K JB 1/2W
C498	403 009 8105	CERAMIC	100P K 50V	1	R478	402 040 5906	OXIDE-MT	2.2K JB 1/2W
C499	403 072 2703	CERAMIC	0.022U Z 50V	1	or	401 055 5703	OXIDE-MT	2.2K JB 1/2W
C501	403 044 0201	ELECT	47U M 16V	1	R479	401 024 7004	CARBON	1K JA 1/6W
C502	403 047 1502	ELECT	4.7U M 25V	1	R480	401 024 7004	CARBON	1K JA 1/6W
C503	403 051 2007	ELECT	4.7U M 50V	1	R481	402 040 7207	WIRE WOUND	0.47 KA 5W
C504	404 012 7000	CERAMIC	0.01U P 500V	1	R482	402 040 7207	WIRE WOUND	0.47 KA 5W
C505	403 074 2701	CERAMIC	0.047U Z 50V	1	R483	401 024 7004	CARBON	1K JA 1/6W
R401	401 024 7004	CARBON	1K JA 1/6W	1	R484	401 024 7004	CARBON	1K JA 1/6W
R402	401 024 7004	CARBON	1K JA 1/6W	1	R485	402 040 5500	OXIDE-MT	1K JB 1/2W
R403	401 024 7707	CARBON	100K JA 1/6W	1	or	401 054 8705	OXIDE-MT	1K JB 1/2W
R404	401 024 7707	CARBON	100K JA 1/6W	1	R486	402 040 5500	OXIDE-MT	1K JB 1/2W
R405	401 024 7707	CARBON	100K JA 1/6W	1	or	401 054 8705	OXIDE-MT	1K JB 1/2W
R406	401 024 7707	CARBON	100K JA 1/6W	1	R487	402 039 6303	OXIDE-MT	10 JB 1W
R407	401 026 3905	CARBON	330 JA 1/6W	1	or	401 058 1207	OXIDE-MT	10 JB 1W
R408	401 026 3905	CARBON	330 JA 1/6W	1	R488	402 039 6303	OXIDE-MT	10 JB 1W
R409	401 025 8703	CARBON	220K JA 1/6W	1	or	401 058 1207	OXIDE-MT	10 JB 1W
R410	401 025 8703	CARBON	220K JA 1/6W	1	R489	401 019 6203	CARBON	4.7 JA 1/4W
R411	401 025 1902	CARBON	15K JA 1/6W	1	R490	401 019 6203	CARBON	4.7 JA 1/4W
R412	401 025 1902	CARBON	15K JA 1/6W	1	R495	401 027 5908	CARBON	68K JA 1/6W
R413	401 024 7707	CARBON	100K JA 1/6W	1	R497	401 027 3003	CARBON	56K JA 1/6W
R414	401 024 7707	CARBON	100K JA 1/6W	1	R498	402 041 7909	OXIDE-MT	3.3K JB 2W
R415	401 024 7004	CARBON	1K JA 1/6W	1	or	401 067 6200	OXIDE-MT	3.3K JB 2W
R416	401 024 7004	CARBON	1K JA 1/6W	1	R499	402 040 5906	OXIDE-MT	2.2K JB 1/2W
R417	401 012 5708	CARBON	1K JA 1/4W	1	or	401 055 5703	OXIDE-MT	2.2K JB 1/2W
R418	401 012 5708	CARBON	1K JA 1/4W	1	R500	402 040 5708	OXIDE-MT	1.5K JB 1/2W
R419	401 012 5708	CARBON	1K JA 1/4W	1	R501	402 041 2003	OXIDE-MT	56 JB 2W
R420	401 012 5708	CARBON	1K JA 1/4W	1	or	401 142 6200	OXIDE-MT	56 JB 2W
R421	401 024 7004	CARBON	1K JA 1/6W	1	R502	402 040 1809	OXIDE-MT	330 JB 2W
R422	401 024 7004	CARBON	1K JA 1/6W	1	or	401 067 5203	OXIDE-MT	330 JB 2W
R423	401 024 7004	CARBON	1K JA 1/6W	1	R503	402 041 2003	OXIDE-MT	56 JB 2W
R424	401 024 7004	CARBON	1K JA 1/6W	1	or	401 142 6200	OXIDE-MT	56 JB 2W
R425	401 024 7004	CARBON	1K JA 1/6W	1	R504	402 016 2106	FUSIBLE RES	220 J- 1/2W
R426	401 024 7004	CARBON	1K JA 1/6W	1	R505	402 040 7108	FUSIBLE RES	22 JA 1W
R427	401 024 7004	CARBON	1K JA 1/6W	1	R506	401 016 3809	CARBON	2.2K JA 1/4W
R428	401 024 7004	CARBON	1K JA 1/6W	1	R507	402 040 5906	OXIDE-MT	2.2K JB 1/2W
R429	402 040 5500	OXIDE-MT	1K JB 1/2W	1	or	401 055 5703	OXIDE-MT	2.2K JB 1/2W
or	401 054 8705	OXIDE-MT	1K JB 1/2W	1	R508	402 040 0505	OXIDE-MT	22 JB 1W
R430	401 016 3809	CARBON	2.2K JA 1/4W	1	or	401 060 1806	OXIDE-MT	22 JB 1W
R431	401 016 3809	CARBON	2.2K JA 1/4W	1	R509	402 040 4008	OXIDE-MT	15 JB 1/2W
R437	401 024 7004	CARBON	1K JA 1/6W	1	or	401 099 6209	OXIDE-MT	15 JB 1/2W
R438	401 024 7004	CARBON	1K JA 1/6W	1	R510	402 040 5906	OXIDE-MT	2.2K JB 1/2W
R441	401 025 8703	CARBON	220K JA 1/6W	1	or	401 055 5703	OXIDE-MT	2.2K JB 1/2W
R442	401 025 8703	CARBON	220K JA 1/6W	1	R511	402 039 5504	OXIDE-MT	3.3K JB 1/2W
R443	401 027 8602	CARBON	8.2K JA 1/6W	1	or	401 065 6008	OXIDE-MT	3.3K JB 1/2W
R444	401 023 2802	CARBON	8.2K JA 1/4W	1	R512	402 015 3906	FUSIBLE RES	22 J- 1/4W
R445	401 026 9907	CARBON	4.7K JA 1/6W	1	R513	401 024 6700	CARBON	100 JA 1/6W
R446	401 026 9907	CARBON	4.7K JA 1/6W	1	R514	401 024 6700	CARBON	100 JA 1/6W
R447	402 015 3104	FUSIBLE RES	100 J- 1/4W	1	R515	401 024 6700	CARBON	100 JA 1/6W
R448	402 015 3104	FUSIBLE RES	100 J- 1/4W	1	R516	401 024 6700	CARBON	100 JA 1/6W
R453	401 025 2305	CARBON	150K JA 1/6W	1	R518	401 013 5301	CARBON	1.2K JA 1/4W
R454	401 025 2305	CARBON	150K JA 1/6W	1	R519	401 021 4105	CARBON	56K JA 1/4W
R455	401 027 8305	CARBON	820 JA 1/6W	1	R520	401 027 5502	CARBON	6.8K JA 1/6W
R456	401 027 8305	CARBON	820 JA 1/6W	1	R521	401 027 5502	CARBON	6.8K JA 1/6W
R457	401 026 9907	CARBON	4.7K JA 1/6W	1	R523	401 027 9005	CARBON	82K JA 1/6W
R458	401 026 9907	CARBON	4.7K JA 1/6W	1	R524	402 015 3104	FUSIBLE RES	100 J- 1/4W
R459	401 024 7707	CARBON	100K JA 1/6W	1	R525	401 025 8208	CARBON	22K JA 1/6W
R460	401 024 7707	CARBON	100K JA 1/6W	1	R526	401 026 1307	CARBON	27K JA 1/6W
R461	401 025 1605	CARBON	1.5K JA 1/6W	1	R527	401 024 7400	CARBON	10K JA 1/6W
R462	401 025 1605	CARBON	1.5K JA 1/6W	1	R528	401 025 4903	CARBON	180K JA 1/6W
R463	401 014 4105	CARBON	1.5K JA 1/4W	1	R529	401 024 7707	CARBON	100K JA 1/6W
R464	401 014 4105	CARBON	1.5K JA 1/4W	1				
R465	401 027 3003	CARBON	56K JA 1/6W	1				
R466	401 027 3003	CARBON	56K JA 1/6W	1				
R467	401 025 7805	CARBON	2.2K JA 1/6W	1				
R468	401 025 7805	CARBON	2.2K JA 1/6W	1				
R469	401 027 3003	CARBON	56K JA 1/6W	1				
R470	401 027 3003	CARBON	56K JA 1/6W	1				
R471	402 039 5504	OXIDE-MT	3.3K JB 1/2W	1				
or	401 085 6008	OXIDE-MT	3.3K JB 1/2W	1				
R472	402 039 5504	OXIDE-MT	3.3K JB 1/2W	1				
or	401 085 6008	OXIDE-MT	3.3K JB 1/2W	1				
R473	402 039 5504	OXIDE-MT	3.3K JB 1/2W	1				
or	401 085 6008	OXIDE-MT	3.3K JB 1/2W	1				
R474	402 039 5504	OXIDE-MT	3.3K JB 1/2W	1				
or	401 085 6008	OXIDE-MT	3.3K JB 1/2W	1				
R475	401 012 4503	CARBON	100 JA 1/4W	1				
R476	402 015 3104	FUSIBLE RES	100 J- 1/4W	1				

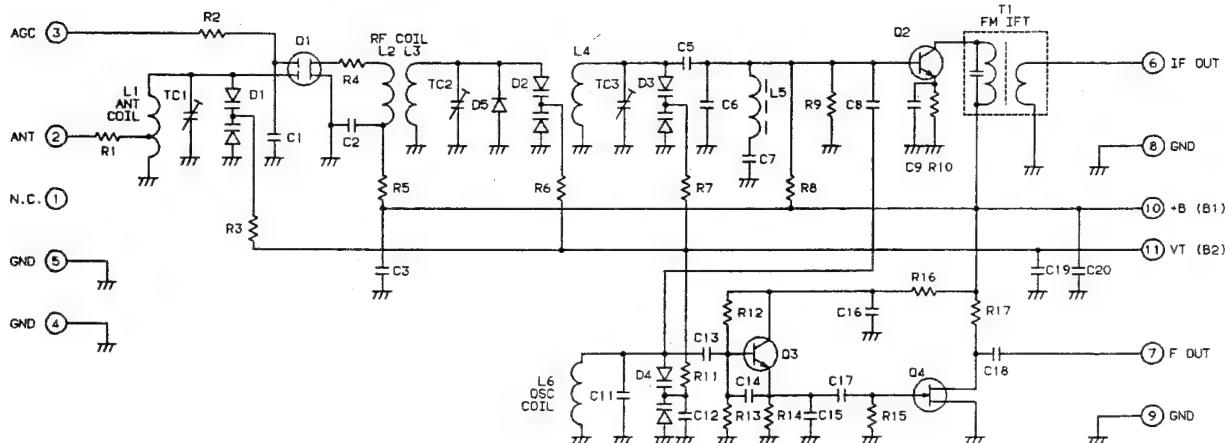
P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty						
G.EQ P.C.B. ASSY													
66	620 190 9432	G.EQ P.C.B. Assy	1	R820	401 027 8602	CARBON	8.2K JA 1/6W						
CN402	620 190 9067	Connector 3P Assy	1	R821	401 025 0004	CARBON	120K JA 1/6W						
CN403	620 190 9074	Connector 5P Assy	1	R822	401 025 0004	CARBON	120K JA 1/6W						
VR801	620 190 8817	Rotary VR 2X250KW	1	R823	401 024 7707	CARBON	100K JA 1/6W						
VR802	620 190 8817	Rotary VR 2X250KW	1	R824	401 024 7707	CARBON	100K JA 1/6W						
VR803	620 190 8817	Rotary VR 2X250KW	1	R825	401 026 7408	CARBON	39K JA 1/6W						
VR804	620 190 8817	Rotary VR 2X250KW	1	R826	401 026 7408	CARBON	39K JA 1/6W						
VR805	620 190 8817	Rotary VR 2X250KW	1	R827	401 026 4605	CARBON	33K JA 1/6W						
IC801	409 018 4503	IC LA6458DS	1	R828	401 026 4605	CARBON	33K JA 1/6W						
Q801	405 018 0200	TR 2SC3331-U	1	R829	401 025 8208	CARBON	22K JA 1/6W						
or	405 018 0101	TR 2SC3331-T	1	R830	401 025 8208	CARBON	22K JA 1/6W						
Q802	405 018 0200	TR 2SC3331-U	1	R831	401 024 9305	CARBON	1.2K JA 1/6W						
or	405 018 0101	TR 2SC3331-T	1	R832	401 024 9305	CARBON	1.2K JA 1/6W						
Q803	405 018 0200	TR 2SC3331-U	1	R833	401 024 9305	CARBON	1.2K JA 1/6W						
or	405 018 0101	TR 2SC3331-T	1	R834	401 024 9305	CARBON	1.2K JA 1/6W						
Q804	405 018 0200	TR 2SC3331-U	1	R835	401 025 1605	CARBON	1.5K JA 1/6W						
or	405 018 0101	TR 2SC3331-T	1	R836	401 025 1605	CARBON	1.5K JA 1/6W						
Q805	405 019 2708	TR 2SC536-F-NP	1	R837	401 025 1605	CARBON	1.5K JA 1/6W						
or	405 019 3804	TR 2SC536-G-NP	1	R838	401 025 1605	CARBON	1.5K JA 1/6W						
Q806	405 019 2708	TR 2SC536-F-NP	1	R839	401 025 1605	CARBON	1.5K JA 1/6W						
or	405 019 3804	TR 2SC536-G-NP	1	R840	401 025 1605	CARBON	1.5K JA 1/6W						
Q807	405 019 2708	TR 2SC536-F-NP	1	R841	401 024 7004	CARBON	1K JA 1/6W						
or	405 019 3804	TR 2SC536-G-NP	1	R842	401 024 7004	CARBON	1K JA 1/6W						
Q808	405 019 2708	TR 2SC536-F-NP	1	R843	401 024 7707	CARBON	100K JA 1/6W						
or	405 019 3804	TR 2SC536-G-NP	1	R844	401 024 7707	CARBON	100K JA 1/6W						
Q809	405 019 2708	TR 2SC536-F-NP	1	R845	401 024 7707	CARBON	100K JA 1/6W						
or	405 019 3804	TR 2SC536-G-NP	1	R846	401 024 7707	CARBON	100K JA 1/6W						
Q810	405 019 2708	TR 2SC536-F-NP	1	R847	401 026 9907	CARBON	4.7K JA 1/6W						
or	405 019 3804	TR 2SC536-G-NP	1	R848	401 026 9907	CARBON	4.7K JA 1/6W						
C801	403 059 0104	POLYESTER	0.018U	K 50V	1	R849	401 026 9907	CARBON	4.7K JA 1/6W				
C802	403 059 0104	POLYESTER	0.018U	K 50V	1	R850	401 026 9907	CARBON	4.7K JA 1/6W				
C803	403 050 7706	ELECT	3.3U	M 50V	1	VR P.C.B. ASSY							
C804	403 050 7706	ELECT	3.3U	M 50V	1	67	620 193 2874	VR P.C.B. Assy	1				
C805	403 075 5107	CERAMIC	8200P	K 50V	1	620 182 7811	Switch Push 1KEY	1					
C806	403 075 5107	CERAMIC	8200P	K 50V	1	PC401	620 190 9197	Jumper	1				
C807	403 048 7602	ELECT	0.47U	M 50V	1	VR601	620 190 8831	Rotary VR 2X100KA	1				
C808	403 048 7602	ELECT	0.47U	M 50V	1	VR602	620 190 8824	Rotary VR 200KW	1				
C809	403 073 8407	CERAMIC	4700P	K 50V	1	C601	403 072 4509	CERAMIC	270P K 50V				
C810	403 073 8407	CERAMIC	4700P	K 50V	1	C602	403 072 4509	CERAMIC	270P K 50V				
C811	403 063 7809	POLYESTER	0.082U	K 50V	1	C603	403 061 4206	POLYESTER	0.039U K 50V				
C812	403 063 7809	POLYESTER	0.082U	K 50V	1	C604	403 061 4206	POLYESTER	0.039U K 50V				
C813	403 070 8608	CERAMIC	1500P	K 50V	1	R601	401 026 9907	CARBON	4.7K JA 1/6W				
C814	403 070 8608	CERAMIC	1500P	K 50V	1	R602	401 026 9907	CARBON	4.7K JA 1/6W				
C815	403 059 6205	POLYESTER	0.022U	K 50V	1	R603	401 027 5502	CARBON	6.8K JA 1/6W				
C816	403 059 6205	POLYESTER	0.022U	K 50V	1	R604	401 027 5502	CARBON	6.8K JA 1/6W				
C817	403 074 9007	CERAMIC	680P	K 50V	1	MODE SWITCH P.C.B. ASSY							
C818	403 074 9007	CERAMIC	680P	K 50V	1	68	620 190 9456	Mode Switch P.C.B. Assy	1				
C819	403 073 8407	CERAMIC	4700P	K 50V	1	620 182 7811	Switch Push 1KEY	1					
C820	403 073 8407	CERAMIC	4700P	K 50V	1	PC402	620 190 9180	Jumper	1				
C825	403 042 0302	ELECT	10U	M 16V	1	POWER IND P.C.B. ASSY							
C826	403 042 0302	ELECT	10U	M 16V	1	69	620 190 9463	Power IND P.C.B. Assy	1				
C829	403 049 1609	ELECT	1U	M 50V	1	PC405	620 190 9159	Jumper	1				
C830	403 049 1609	ELECT	1U	M 50V	1	D702	407 109 1301	LED SEL1122P	1				
C831	403 031 0306	CERAMIC	68P	K 50V	1	SP SW,HP P.C.B. ASSY							
C832	403 031 0306	CERAMIC	68P	K 50V	1	70	620 190 9470	SP SW,HP P.C.B. Assy	1				
C833	403 009 8105	CERAMIC	100P	K 50V	1	620 016 5815	Switch Push 1 Key	1					
C834	403 009 8105	CERAMIC	100P	K 50V	1	620 189 9641	Jack 7P Black	1					
C835	403 047 1502	ELECT	4.7U	M 25V	1	PC404	620 190 9166	Jumper	1				
C836	403 047 1502	ELECT	4.7U	M 25V	1	R701	402 039 9205	OXIDE-MT	470 JB 1W				
R801	401 026 6609	CARBON	390	JA 1/6W	1	or	401 062 1309	OXIDE-MT	470 JB 1W				
R802	401 026 6609	CARBON	390	JA 1/6W	1	R702	402 039 9205	OXIDE-MT	470 JB 1W				
R803	401 026 6609	CARBON	390	JA 1/6W	1	or	401 062 1309	OXIDE-MT	470 JB 1W				
R804	401 026 6609	CARBON	390	JA 1/6W	1	R703	401 014 2903	CARBON	150 JA 1/4W				
R805	401 026 6609	CARBON	390	JA 1/6W	1	R704	401 014 2903	CARBON	150 JA 1/4W				
R806	401 026 6609	CARBON	390	JA 1/6W	1	 							
R807	401 026 6609	CARBON	390	JA 1/6W	1	 							
R808	401 026 6609	CARBON	390	JA 1/6W	1	 							
R809	401 026 6609	CARBON	390	JA 1/6W	1	 							
R810	401 026 6609	CARBON	390	JA 1/6W	1	 							
R811	401 027 8602	CARBON	8.2K	JA 1/6W	1	 							
R812	401 027 8602	CARBON	8.2K	JA 1/6W	1	 							
R813	401 027 8602	CARBON	8.2K	JA 1/6W	1	 							
R814	401 027 8602	CARBON	8.2K	JA 1/6W	1	 							
R815	401 027 8602	CARBON	8.2K	JA 1/6W	1	 							
R816	401 027 8602	CARBON	8.2K	JA 1/6W	1	 							
R817	401 027 8602	CARBON	8.2K	JA 1/6W	1	 							
R818	401 027 8602	CARBON	8.2K	JA 1/6W	1	 							
R819	401 027 8602	CARBON	8.2K	JA 1/6W	1	 							

P.C.BOARD PARTS LIST (Continued)

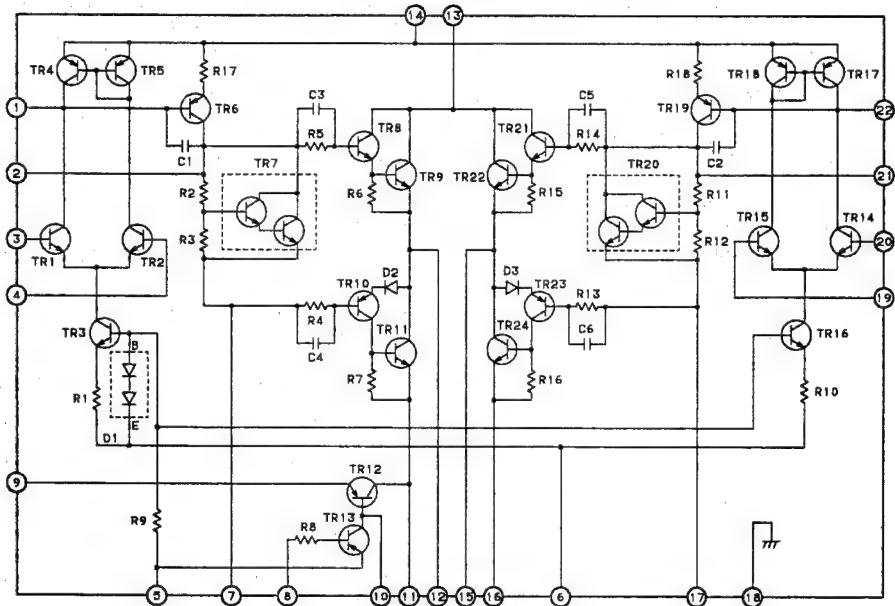
Ref. No.	Part No.	Description	Q'ty					
SP TERMINAL P.C.B. ASSY								
71	620 193 2881	SP Terminal P.C.B. Assy	1					
	620 020 5887	Connector 1P Assy	1					
	620 185 1953	Push Terminal 8P	1					
PC701	620 190 9173	Jumper	1					
C701	403 069 0705	CERAMIC	1000P	K 50V	1			
C702	403 069 0705	CERAMIC	1000P	K 50V	1			
C703	403 069 0705	CERAMIC	1000P	K 50V	1			
C704	403 069 0705	CERAMIC	1000P	K 50V	1			
C705	403 069 0705	CERAMIC	1000P	K 50V	1			
C706	403 069 0705	CERAMIC	1000P	K 50V	1			
TERMINAL P.C.B. ASSY								
72	620 193 2904	Terminal P.C.B. Assy	1					
	620 022 2587	EC Terminal 1P	2					
	620 031 4763	Wire Wrap Terminal	6					
FUSE TERMINAL ASSY								
73	620 193 2911	Fuse Terminal Assy	1					
	620 017 2738	Fuse Clip	6					
△	423 005 0507	FUSE	250V	T1A	1			
△	423 007 2103	FUSE	250V	T4A	2			
	620 031 4763	Wire Wrap Terminal	6					
	620 193 5370	Label Fuse (T4A)	1					
S/D IND P.C.B. ASSY								
74	620 193 2928	S/D IND P.C.B. Assy	1					
D701	407 016 5409	LED LN324GP	1					
S/D SWITCH P.C.B. ASSY								
75	620 193 2935	S/D Switch P.C.B. Assy	1					
	620 191 0315	Push Switch 1KEY	1					
	620 055 2349	Jumper	1					
R605	401 024 9701	CARBON	12K	JA 1/6W	1			
R606	401 024 9701	CARBON	12K	JA 1/6W	1			
R607	401 027 3003	CARBON	56K	JA 1/6W	1			
R608	401 027 3003	CARBON	56K	JA 1/6W	1			
NOTES:								
1.	Parts order must contain Model Number, Part Number and Description.							
2.	Ordering quantity of screws and resistors must be multiple of 10 pcs.							
PRODUCT SAFETY NOTICE								
Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol △ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with △, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.								

FRONT END SCHEMATIC DIAGRAM

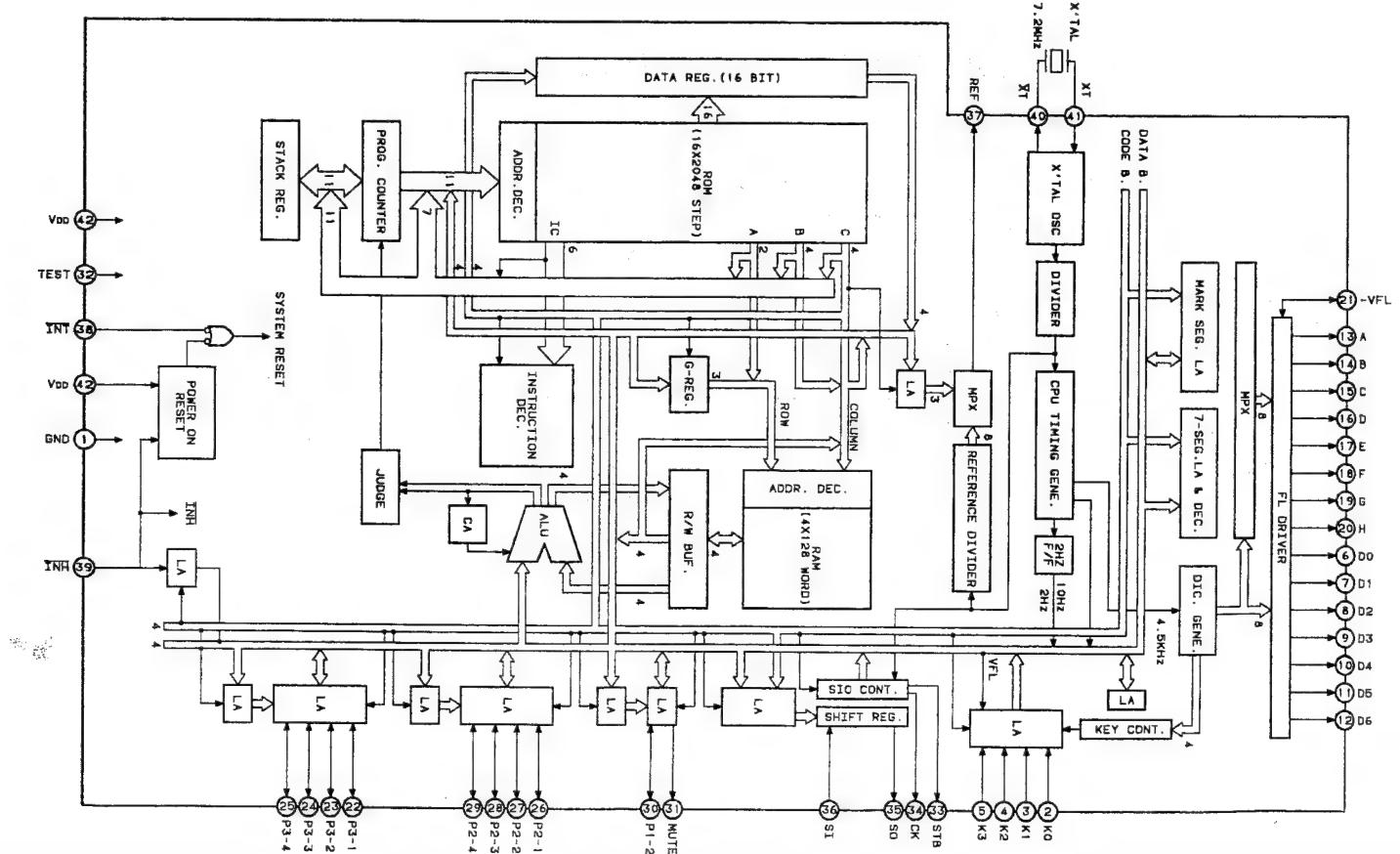


IC BLOCK DIAGRAM

STK4171MK5-SA BLOCK DIAGRAM

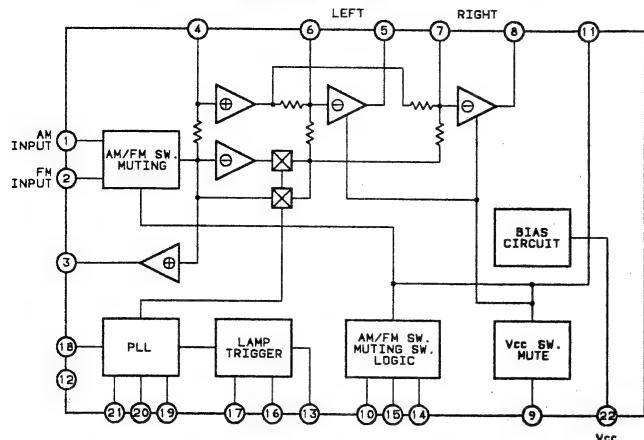


TSE1039AN-012 BLOCK DIAGRAM

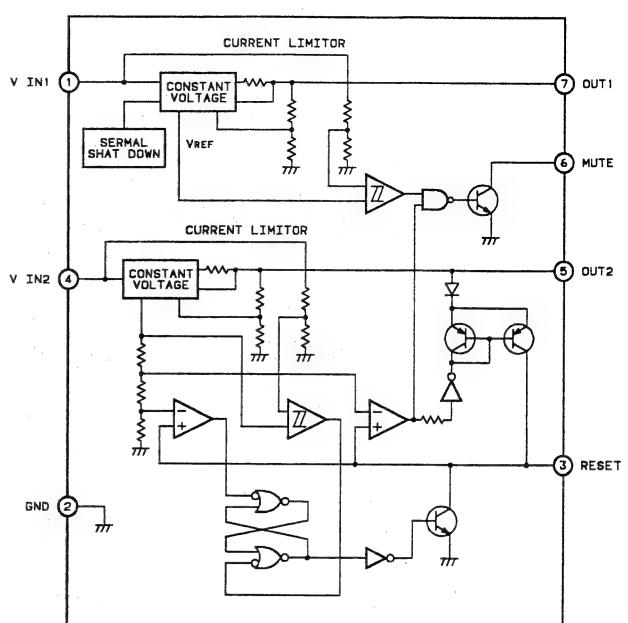


IC BLOCK DIAGRAM (Continued)

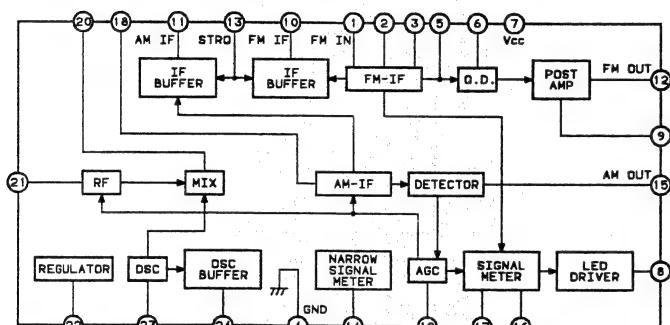
LA3400 BLOCK DIAGRAM



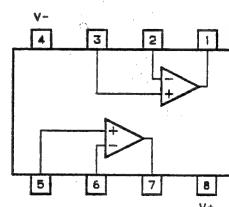
LA5667 BLOCK DIAGRAM



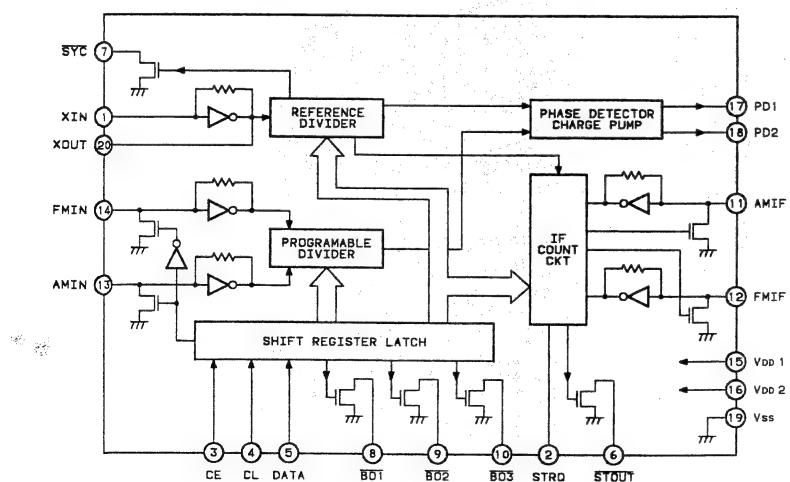
LA1266 BLOCK DIAGRAM



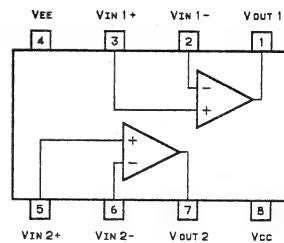
UPC4570C BLOCK DIAGRAM



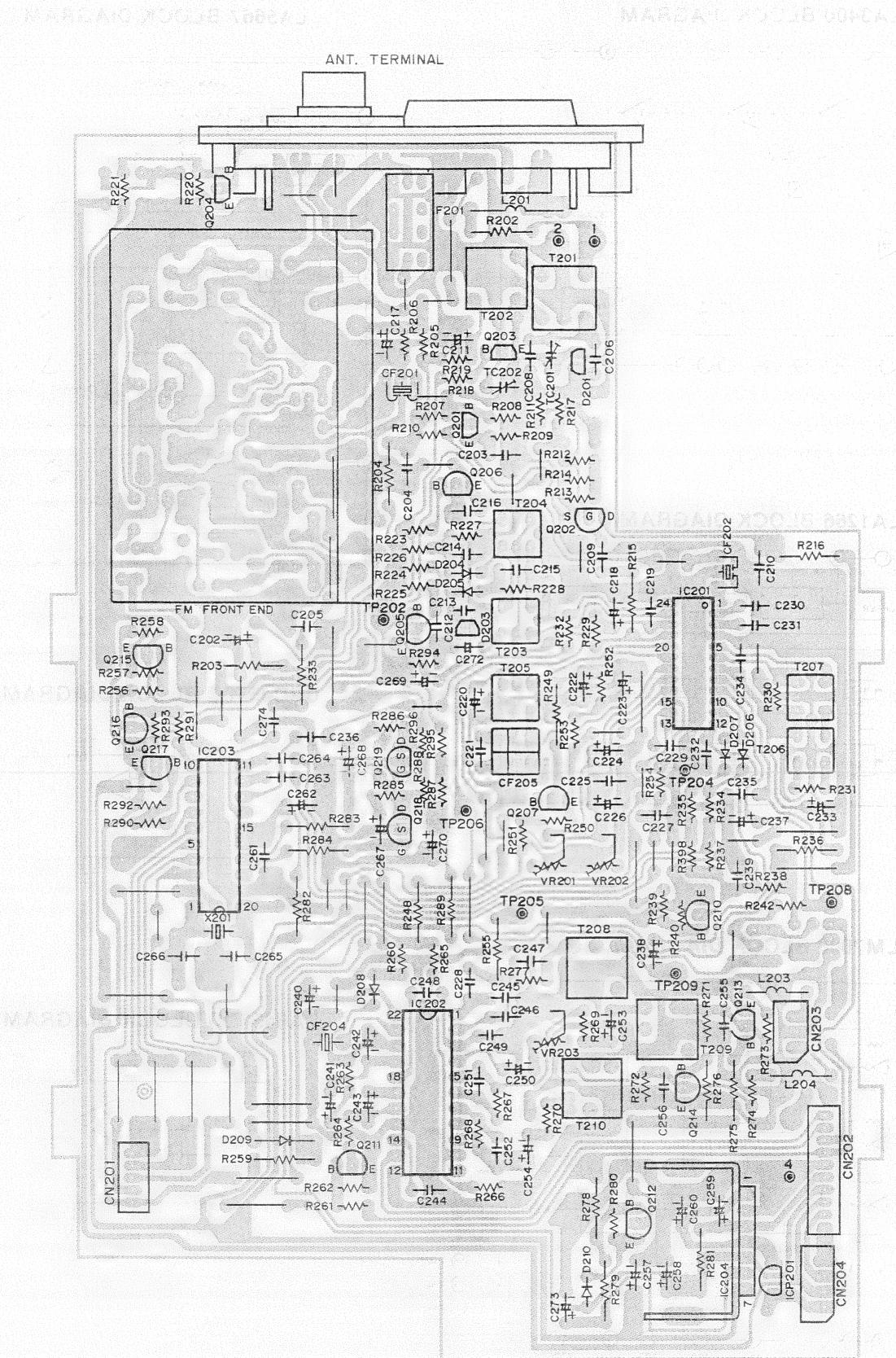
LM7000 BLOCK DIAGRAM



LA6458DS BLOCK DIAGRAM



TUNER PRINTED CIRCUIT BOARD (BOTTOM VIEW)



**CHASSIS IC & TRANSISTOR DC VOLTAGES
(WAVES MOTION)**

		IC PIN NUMBERS DC VOLTAGES																			
Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC201	LA1266	2.4	2.4	2.4	0	12.0	12.0	12.0	5.3	3.6	2.4	2.6	3.2	0	1.5	1.2	0	0	2.4	1.2	0
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		4.0	4.0	4.0	3.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

		IC PIN NUMBERS DC VOLTAGES																			
Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC202	LA3400	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	0	0	0	5.3	4.9	0	2.9	2.9	2.9	2.9	2.9
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		3.5	10.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

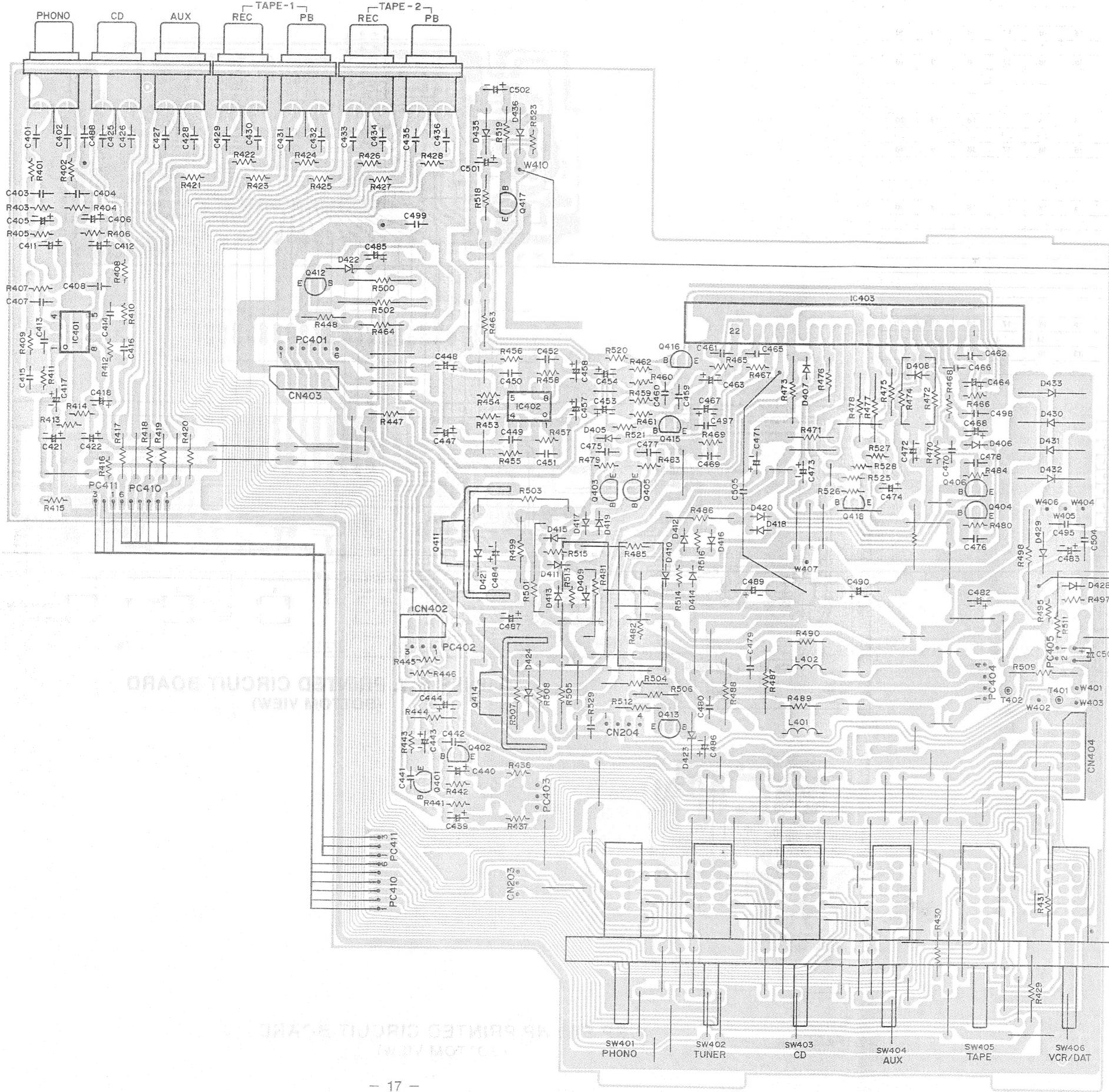
		IC PIN NUMBERS DC VOLTAGES																			
Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC203	LM7000	1.5	0	0	0	0	5.4	0	0	12.7	12.7	0	0	0	2.7	5.1	5.1	1.1	1.1	0	1.5
IC204	LA5667	24.3	0	4.9	24.3	0	4.2	13.1	—	—	—	—	—	—	—	—	—	—	—	—	—
IC401	UPC4570C	0	0	0	-15.0	0	0	0	15.0	—	—	—	—	—	—	—	—	—	—	—	—
IC402	UPC4570C	0	0	0	-10.0	0	0	0	-10.0	—	—	—	—	—	—	—	—	—	—	—	—
IC801	LA6458DS	0	0	0	-15.0	0	0	0	15.1	—	—	—	—	—	—	—	—	—	—	—	—

		IC PIN NUMBERS DC VOLTAGES																			
Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC403	STK4171	40.3	1.2	-0.1	-0.1	0	-40.8	-1.3	3.6	-42.4	-43.5	-43.5	0	42.7	41.2	0	-43.5	-1.3	0	-0.1	-0.1
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		1.1	40.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

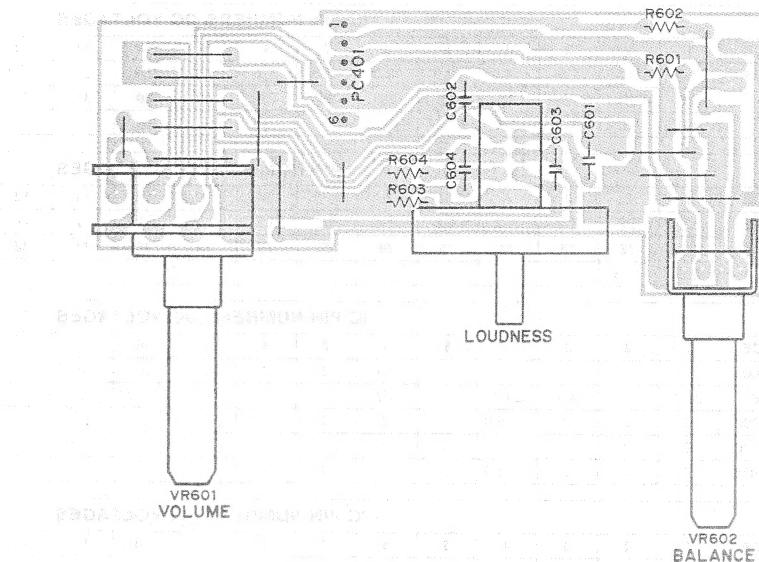
**CHASSIS TRANSISTOR & FET VOLTAGES
(WAVES MOTION)**

		TRANSISTOR & FET DC VOLTAGES																			
Ref. No.	DEVICE	B (D)	C (G)	E (S)	Ref. No.	DEVICE	B (D)	C (G)	E (S)	Ref. No.	DEVICE	B (D)	C (G)	E (S)							
Q201	2SC2839	1.8	11.9	1.1	Q401	2SC3331	-1.1	15.2	-1.8	Q804	2SC3331	-0.6	14.6	-1.3							
Q202	2SK246	10.9	4.2	6.8	Q402	2SC3331	-0.9	15.3	-1.5	Q805	2SC536	-0.3	14.5	-0.9							
Q203	2SD1012	0	12.5	0	Q403	2SC536	0	1.0	0	Q806	2SC536	-0.2	14.4	-0.8							
Q204	2SD1012	0	4.5	0	Q404	2SC536	0	1.0	0	Q807	2SC536	-0.3	14.5	-0.9							
Q205	2SC536	0.7	0	0	Q405	2SA608	0	-1.2	0	Q808	2SC536	-0.2	14.5	-0.8							
Q206	2SC536	0	13.0	0	Q406	2SA608	0	-1.2	0	Q809	2SC536	-0.1	14.5	-0.7							
Q207	2SA608	0.8	1.2	1.2	Q411	2SD1913	-18.9	35.5	18.3	Q810	2SC536	-0.1	14.5	-0.8							
Q210	2SC536	0	13.0	0	Q412	2SB560	-18.9	-29.5	-18.3	—	—	—	—	—							
Q211	2SC536	0	3.0	0	Q413	2SA984	-28.7	-40.4	-28.0	—	—	—	—	—							
Q212	2SA608	4.3	4.9	5.0	Q414	2SD1913	25.8	36.7	25.3	—	—	—	—	—							
Q213	2SC536	0.6	0	0	Q415	2SC536	-0.4	0	0	—	—	—	—	—							
Q214	2SC536	0.6	0	0	Q416	2SC536	-0.2	0	0	—	—	—	—	—							
Q215	2SC536	0	0.7	0	Q417	2SA608	9.8	-0.1	9.9	—	—	—	—	—							
Q216	2SA608</																				

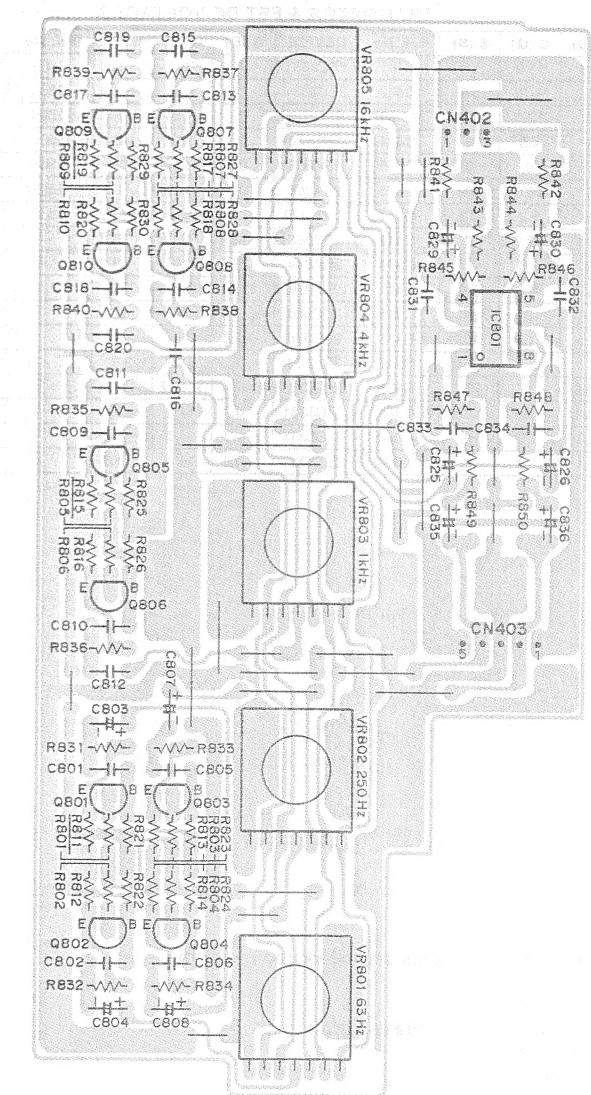
**ORACETTUORO GET MAIN AMPLIFIER PRINTED CIRCUIT BOARD
(BOTTOM VIEW)**



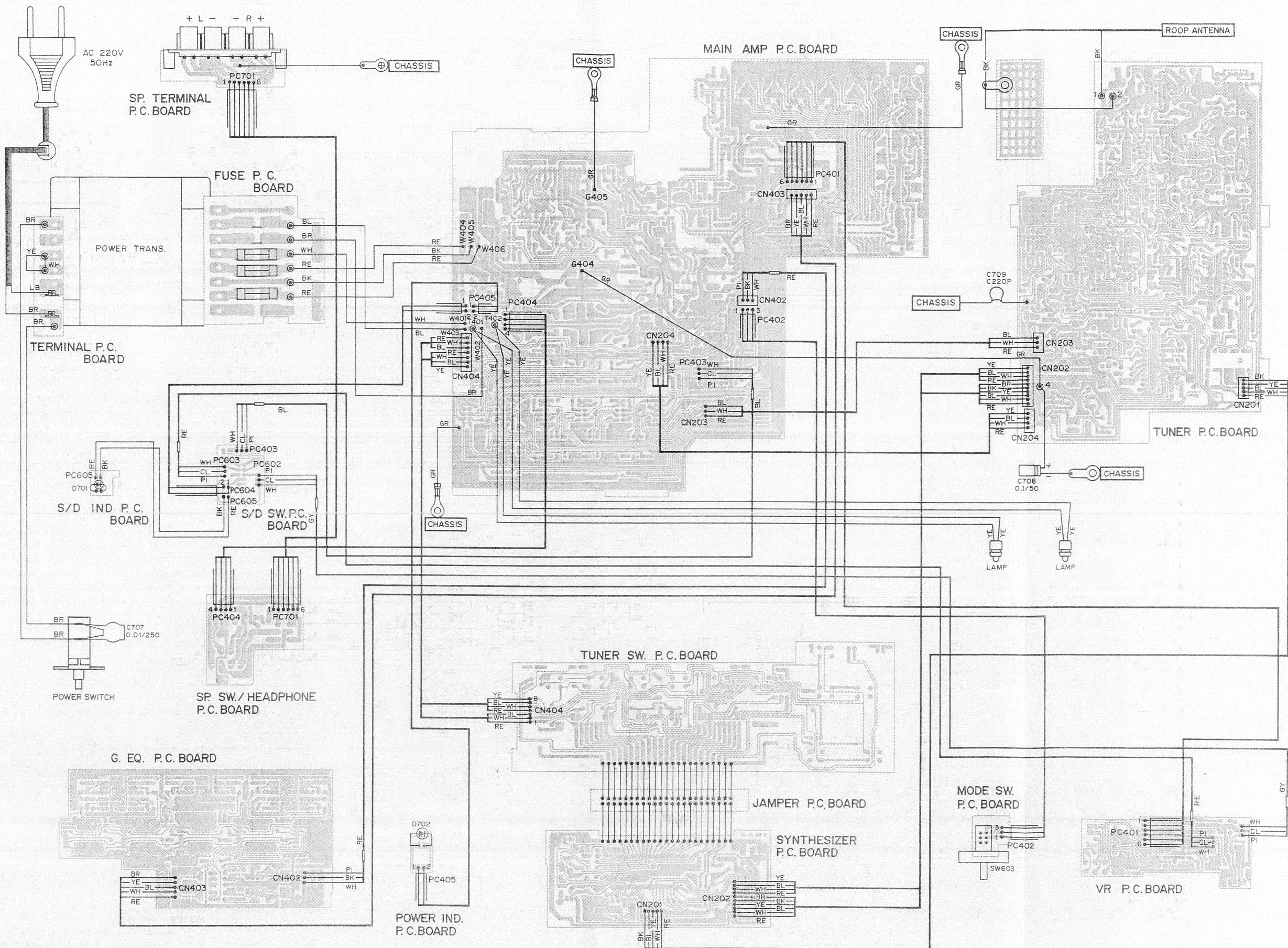
**ORACETTUORO VR PRINTED CIRCUIT BOARD
(BOTTOM VIEW)**



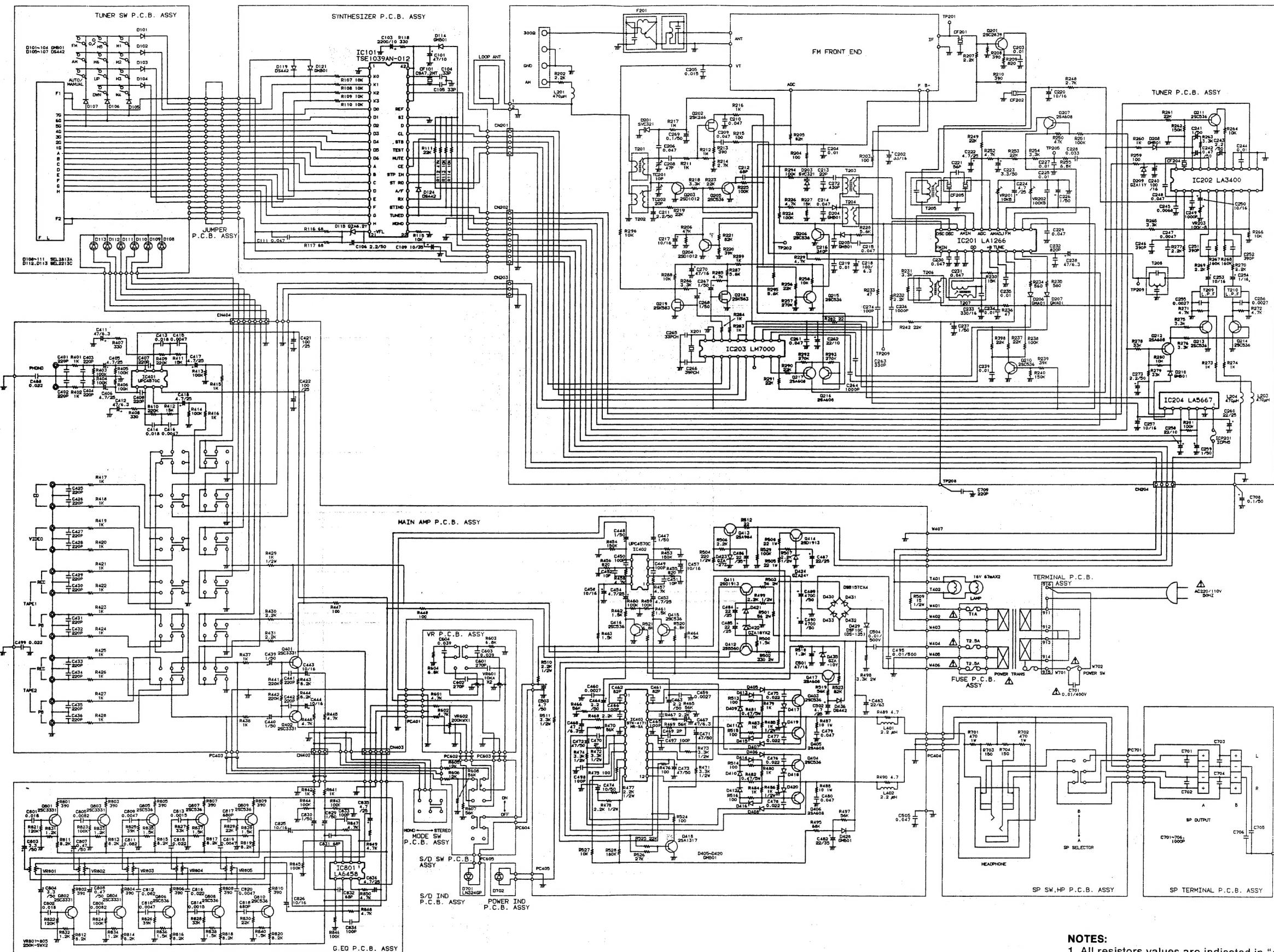
**G-EQ PRINTED CIRCUIT BOARD
(BOTTOM VIEW)**



POINT TO POINT WIRING DIAGRAM



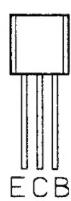
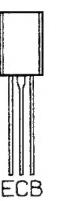
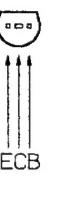
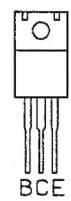
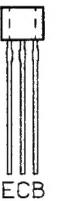
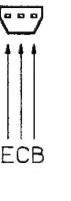
SCHEMATIC DIAGRAM



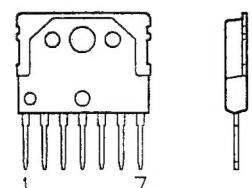
NOTES:

1. All resistors values are indicated in "ohm" ($K = 10^3$, $M = 10^6$).
2. All capacitors values are indicated in " μF " ($P = 10^{-12}$).
3. This is a basic schematic diagram.

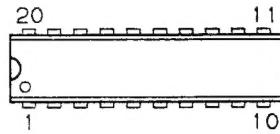
IC & TRANSISTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW	TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SA608 2SA984 2SC3331 2SC536			2SB560		
2SD1913			2SA1317 2SC2839 2SD1012		
2SK246			2SK583		
TERMINAL NAME					
B → BASE C → COLLECTOR E → Emitter			S → SOURCE G → GATE D → DRAIN		

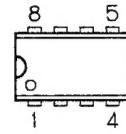
LA5667 FRONT/SIDE VIEWS



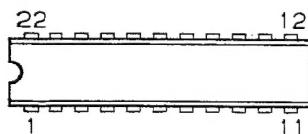
LM7000 TOP VIEW



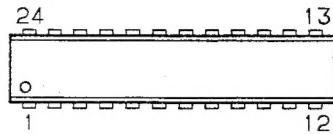
UPC4570C TOP VIEW



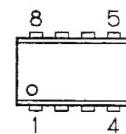
LA3400 TOP VIEW



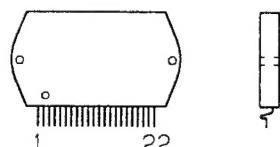
LA1266 TOP VIEW



LA6458DS TOP VIEW



STK4171MK5-SA FRONT/SIDE VIEWS



TSE1039AN-012 TOP VIEW

